

What is claimed is:

1. A robot comprising:
 - a movement system for moving the robot over a surface;
 - at least one magnetic contact extending from the robot;
 - 5 a control system in communication with the at least one magnetic contact;
 - a power supply for the robot, the power supply in communication with the control system and the at least one magnetic contact, and
 - the control system is configured for permitting charging of the power supply through the at least one magnetic contact when a predetermined voltage on the at least
 - 10 one contact is detected.
2. The robot of claim 1, wherein the at least one magnetic contact extends laterally from the robot.
- 15 3. The robot of claim 2, wherein the predetermined voltage is at least a threshold voltage of approximately 25 volts.
4. The robot of claim 2, wherein the at least one magnetic contact includes two magnetic contacts.
- 20 5. The robot of claim 1, wherein the at least one magnetic contact is electrically conductive.

6. The robot of claim 1, wherein the movement system includes a first wheel on a slidably mounted mechanism, the slidably mounted mechanism configured such that when the first wheel drops a predetermined distance, the control system slows movement of the robot.

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7. The robot of claim 1, wherein the movement system includes a first wheel on a slidably mounted mechanism, the slidably mounted mechanism configured such that when the first wheel drops a predetermined distance, the control system stops movement of the robot.

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8. A robot comprising:

a movement system for moving the robot over a surface;

at least one contact for electrical communication with a transmission part, the at least one contact extending laterally from the robot; and

15 a power supply for the robot, the power supply in communication with the at least one contact.

9. The robot of claim 8, wherein the electrical communication includes the transfer of electricity, and the power supply is in electrical communication with the at least one

20 contact.

10. The robot of claim 9, wherein the at least one contact includes two contacts.

11. The robot of claim 10, additionally comprising:

a control system in electrical communication the movement system, the contacts, and the power supply, the control system configured for permitting charging of the power supply through the contacts when a predetermined voltage on the contacts is detected.

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12. The robot of claim 11, wherein the predetermined voltage is at least a threshold voltage of approximately 25 Volts.

13. The robot of claim 10, wherein the contacts are electrically conductive.

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14. The robot of claim 10, wherein the contacts are magnetically conductive.

15. The robot of claim 8, wherein the movement system includes a first wheel on a slidably mounted mechanism, the slidably mounted mechanism configured such that

15 when the first wheel drops a predetermined distance, the control system slows movement of the robot.

16. The robot of claim 8, wherein the movement system includes a first wheel on a slidably mounted mechanism, the slidably mounted mechanism configured such that

20 when the first wheel drops a predetermined distance, the control system stops movement of the robot.

17. A docking station comprising:

a portion configured for receiving a robot;

a receptor mechanism coupled to the robot receiving portion for receiving at least one docking contact of the robot;

a system for providing energy to the robot for charging at least one power supply
5 of the robot, the system coupled to the receptor mechanism; and

the receptor mechanism is configured for contacting the at least one docking contact of the robot in a substantially horizontal orientation and transmitting energy therethrough.

10 18. The docking station of claim 17, wherein the receptor mechanism is configured for contacting two docking contacts on the robot.

19. The docking station of claim 18, wherein the receptor mechanism includes oppositely disposed contact arms, each of the contact arms configured for electrical
15 contact with a docking contact of the robot.

20. The docking station of claim 18, wherein the receptor mechanism includes oppositely disposed contact arms, each of the contact arms configured for magnetic contact with a docking contact of the robot.

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21. The docking station of claim 17, additionally comprising:

a control system in communication with the energy providing system, the control system configured for communication with at least one tap of an irrigation system, and

the control system is coupled with the receptor mechanism and configured for sending a signal to a robot docked in the docking station, through the receptor mechanism and the at least one docking contact, for initiating operation of the robot.

- 5 22. The docking station of claim 19, wherein system for providing energy provides electricity to the contact arms at a predetermined voltage.

23. The docking station of claim 22, wherein the predetermined voltage is a voltage that causes the control system of a robot to recognize docking between the robot and the
10 docking station to initiate charging of the robot.

24. The docking station of claim 27, wherein the portion configured for receiving a robot includes an inclined section and a valley at least partially within the inclined section, the valley configured for accommodating at least one wheel of a robot and the inclined
15 section of a height such that the at least one wheel of the robot can drop a predetermined distance, such that control system of the robot slows movement of the robot.

25. The docking station of claim 17, wherein the portion configured for receiving a robot includes an inclined section and a valley at least partially within the inclined section, the
20 valley configured for accommodating at least one wheel of a robot and the inclined section of a height such that the at least one wheel of the robot can drop a predetermined distance, such that control system of the robot stops movement of the robot.

26. The docking station of claim 21, wherein the control system includes a perimeter signal unit for placing a signal in at least one segment of a wire electrically coupled to the perimeter signal unit.
- 5 27. The docking station of claim 26, wherein the perimeter signal unit emits an electromagnetic signal.
28. A docking station comprising:
- 10 a portion configured for receiving a robot;
- a receptor mechanism coupled to the robot receiving portion; and
- a controller for coupling with at least one tap of an irrigation system, and the controller is coupled to the receptor mechanism, the receptor mechanism configured for being in at least electrical contact with at least one docking contact of the robot, when the robot is docked in the docking station, and the controller is configured for sending a
- 15 signal to a robot docked in the docking station, through the receptor mechanism and the at least one docking contact, for initiating operation of the robot.
29. The docking station of claim 28, wherein the controller is configured for sending a signal to the robot docked in the docking station for initiating operation of the robot at
- 20 predetermined intervals.
30. The docking station of claim 29, additionally comprising:

a system for providing energy to a robot for charging at least one power supply of the robot, the system for providing energy in communication with the receptor mechanism, and the energy providing system for providing energy to the robot when the at least one docking contact on the robot is in contact with the receptor mechanism.

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31. The docking station of claim 29, wherein the at least one docking contact on the robot includes at least two docking contacts on the robot in contact with the receptor mechanism.

10 32. The docking station of claim 31, wherein the receptor mechanism includes oppositely disposed contact arms, each of the contact arms configured for electrical contact with a docking contact of the robot.

15 33. The docking station of claim 31, wherein the receptor mechanism includes oppositely disposed contact arms, each of the contact arms configured for magnetic contact with a docking contact of the robot.

20 34. The docking station of claim 32, wherein system for providing energy provides electricity to the contact arms at a predetermined voltage sufficient to cause the control system of a robot to recognize docking between the robot and the docking station to initiate charging of the robot.

35. The docking station of claim 28, wherein the portion configured for receiving a robot includes an inclined section and a valley at least partially within the inclined section, the valley configured for accommodating at least one wheel of a robot and the inclined section of a height such that the at least one wheel of the robot can drop a predetermined distance, such that control system of the robot slows movement of the robot.

36. The docking station of claim 28, wherein the portion configured for receiving a robot includes an inclined section and a valley at least partially within the inclined section, the valley configured for accommodating at least one wheel of a robot and the inclined section of a height such that the at least one wheel of the robot can drop a predetermined distance, such that control system of the robot stops movement of the robot.

37. A docking system comprising:
a docking station for location on a surface, the docking station configured for accommodating a robot in at least a docking engagement, the docking station including a first transmission part for at least transferring energy; and

a robot configured for movement over the surface, the robot including a movement system and a second transmission part, the second transmission part configured for at least receiving energy from the first transmission part when the first transmission part is in electrical contact with the second transmission part when the robot is docked in the docking station, and the docking is achieved when the first transmission part and the second transmission part are in at least a substantially horizontal alignment.

38. The docking system of claim 37, wherein the second transmission part includes a plurality of docking contacts extending laterally from the robot.

39. The docking system of claim 38, wherein the plurality of docking contact includes
5 two docking contacts.

40. The docking system of claim 39, wherein the robot includes a control system in electrical communication with each of the docking contacts for determining if there is a threshold voltage at the docking contacts.

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41. The docking system of claim 37, wherein the first transmission part includes a receptor mechanism including electrically conductive arms for contacting the second transmission part to facilitate the passage of energy therethrough.

15 42. The docking system of claim 41, wherein energy includes electricity for charging a power supply of the robot.

43. The docking system of claim 41, wherein the second transmission part is magnetic and the electrically conductive arms are of a magnetically attractive material.

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44. The docking system of claim 37, wherein the first transmission part and the second transmission part are configured for transferring and receiving signals therebetween.

45. A docking system comprising:

a docking station for location on a surface, the docking station configured for accommodating a robot in at least a docking engagement, the docking station including a first transmission part for at least facilitating the transmission and reception of signals;

5 and

a robot configured for movement over the surface, the robot including a movement system and a second transmission part, the second transmission part configured for at least facilitating the transmission and reception of signals to and from the first transmission part, when the first transmission part is in electrical contact with the second transmission part when the robot is docked in the docking station, and the docking is achieved when the first transmission part and the second transmission part are in at least a substantially horizontal alignment.

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46. The docking system of claim 45, wherein the second transmission part includes a plurality of docking contacts extending laterally from the robot.

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47. The docking system of claim 46, wherein the plurality of docking contact includes two docking contacts.

20 48. A method for docking a robot comprising:

responding to a signal in a wire defining a boundary;

moving to a docking station by traveling along at least a portion of the wire;

attempting to dock in the docking station by a first transmission part on the docking station being electrically contacted by a second transmission part on the robot; and,
determining if the electrical contact is at a predetermined level.

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49. The method of claim 48, wherein if the electrical contact is at least at a predetermined level, transmitting energy from the docking station to the robot, through the first and second transmission parts.

10 50. The method of claim 48, wherein transmitting energy from the docking station to the robot includes transmitting electricity from the docking station to a power supply of the robot, to charge the power supply, through the electrical contact of the first and second transmission parts.

15 51. The method of claim 48, wherein if the electrical contact is not at the predetermined level or an electrical contact is not made, moving the robot out of the docking station and attempting to redock in the docking station.

52. The method of claim 50, additionally comprising: signaling the robot to resume
20 operation when the power supply of the robot is charged to a predetermined level.

53. The method of claim 48, wherein the second transmission part includes at least one docking contact extending from the robot.

54. The method of claim 53, wherein the at least one docking contact includes two docking contacts.

- 5 55. The method of claim 48, wherein the first transmission part includes a receptor mechanism including electrically conductive arms for contacting the second transmission part to facilitate the passage of energy therethrough.

56. A robot comprising:

- 10 a movement system for moving the robot over a surface; and
at least one contact for communicating with a transmission part of a docking station, the at least one contact being magnetic and extending laterally from the robot, the at least one contact for facilitating communication with the at least one transmission part when the movement system moves the robot into a position for docking, and for
15 maintaining the position of the robot in the docking station.

57. The robot of claim 56, additionally comprising: a power supply for the robot, the power supply in communication with the at least one contact.

- 20 58. The robot of claim 56, wherein the at least one contact is configured for contacting the transmission part in an electrically conductive contact.

59. The robot of claim 58, wherein the electrically conductive contact includes facilitating the passing of signals to the robot and the receipt of signals by the robot.

60. The robot of claim 59, wherein the at least one contact includes two contacts.

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61. The robot of claim 60, wherein the at least one transmission part includes two oppositely disposed conductive arms, each of the arms for electrical and magnetic contact with one of the contacts.

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